



**ENVIRONMENTAL  
COUNCIL  
OF ALEXANDRIA**

May 17, 2021

**Memorandum**

From: Andrew Macdonald, Chair, Environmental Council of Alexandria VA (ECA)

To: Ms. Kathie Hoekstra, Chair, Environmental Policy Commission (EPC)

**Subject: Stream restoration issues that need to be investigated with full community participation (Taylor Run, Strawberry Run and Lucky Run)**

Dear Chair and Members of EPC:

We were alarmed that the City Council did not firmly reject moving ahead with these three stream restoration projects at the Council Legislative Meeting on April 27. The ECA has provided the City with more than enough scientific evidence to show that these projects will not restore these watersheds or improve water quality in the Chesapeake Bay.

We reserve our strongest criticism for the consultants that the City has engaged to provide them with expert advice. Wetland Studies and Solutions, Inc. continues to give the City Council and staff misleading and inaccurate scientific information regarding stream restoration.

We support efforts by the EPC to look more closely at the environmental impacts and Clean Water Act benefits of these stormwater/TMDL projects and investigate more environmentally sound and effective alternatives. However, the ECA should be seated at the table with the EPC and the City during the review of these projects. The City Council should direct the City Manager to formally include us, Rod Simmons, and John Field in the review process.

The claim that stream restoration is effective is based on flawed, scientifically incorrect assumptions about how natural streams function and unsubstantiated assertions about the supposed benefits and performance of Natural Channel Design (NCD) techniques in urban watersheds. These projects are not going to restore these streams or produce cleaner water.

In order to restore Alexandria's streams and help clean up the Chesapeake Bay, we need an alternative watershed restoration and TMDL strategy for degraded urban streams in Alexandria and elsewhere. We should control stormwater runoff near its source before it harms these streams. We should not be clearcutting and bulldozing the critically important forests along these streams and filling stream channels with sediment.

The goal should be to allow these streams to heal in a more natural and sustainable manner and any in-stream restoration work should be based on a sound understanding of natural fluvial processes.

**We believe the EPC should investigate the following issues more thoroughly:**

1. Alternatives that involve controlling storm water before it reaches these urban streams

*We believe that the City should investigate how we might retrofit existing BMPs and add other green infrastructure to control runoff in a more natural*

*manner thus reducing the impact of stormwater runoff on these urban streams while reducing pollution too.*

2. The performance of existing stream restoration projects in urban watersheds

*We ask the City to conduct a critical review of projects that have failed locally and claims made by WSSI consultants that these projects do not fail and deliver the promised ecological and pollution reduction benefits.*

3. How the City has calculated its pollution credits and the accuracy of existing modeling methods and protocols

*We know that the City's pollution reduction estimates are inaccurate. They were based on a Pennsylvania stream in farmland. Our estimates of bioavailable P and N indicate that the levels of "pollutants" found in sediments along the stream are quite low. Given that these projects fail to stop erosion it's likely that these projects result in more, not less, pollution, as all the new sediment that is used to construct the new channel is eroded by stormwater runoff.*

4. The environmental impact of stream restoration on the streamside forests and a proper accounting of their natural benefits

*The Potomac Conservancy has given a Grade of F to the protection of streamside forests in its recent Potomac River Report Card.*

5. More environmentally sensitive ways to stabilize and protect existing sanitary lines in Taylor Run

*We note that there is no evidence that these sewer lines would fail even if we did nothing or that NCD will result in a more stable stream channel.*

6. The indirect environmental impacts on Chinquapin Park, its wetlands and other natural habitat, soils, and carbon/pollution recycling value

*We know that NCD will result in the shrinkage and filling in of the stream channel and the potential for over-bank flooding which does not currently occur and may never have been common here.*

7. How we might combine flood-reduction with water-quality efforts in local watersheds

*Please see the City's 2016 CSSCA sewer report, which shows clearly that it may be more cost-effective and effective to combine flood and water-quality control efforts. The Mayor continues to assert that these objects are separate, when in fact it may be far more cost-effective and effective to combine these efforts.*

8. The consultants' claim that these projects (NCD) will not fail and will be designed "naturally" to withstand existing peak (IDF) flows and higher and more frequent flood events related to climate change

*We believe that these projects will turn the streams into armored stormwater management conveyance systems that will still be prone to failure and erosion- and will increase the flood risk. (See also new Alexandria FEMA maps which show change in future risk from Level X to flood zone AE in these watersheds etc.)*

9. The existing aquatic biodiversity in these streams

*We note that there is little evidence in the literature that shows stream restoration (especially in urban watersheds) produces any aquatic uplift in these streams. A recent survey by a Izaak Walton League of America representative found a lot of macroinvertebrates in the lower part of Taylor Run. Filling in the steam with as much as 9 feet of fill and scrubbing the landscape along these streams of its native vegetation is not going to improve the stream's aquatic environment.*

10. The levels and types of pollutants that are carried into Taylor Run, Lucky Run, and Strawberry Run by stormwater runoff

*We believe that stormwater is the primary source of pollution in these streams. The City should be focusing its attention on the reduction of stormwater pollution upstream.*

#### Summary of the ECA's conclusions about stream restoration in Alexandria

- Stream restoration does improve the ecological wellbeing of these streams. Replanting won't replicate the ecological biodiversity and benefits of the existing natural habitat to these watersheds and to the Chesapeake Bay.
- NCD is not going to transform these streams into more naturally functioning streams that can reverse decades of abuse caused by our failure to manage stormwater runoff closer to its source.
- Stream erosion is not the primary source of pollution in Taylor Run, Strawberry Run, or Lucky Run.
- Stream restoration is not an effective or environmentally sound way for the City to meet its Chesapeake Bay TMDL pollution diet goals. The pollution credits (benefits) that the City says the project will generate are not based on real performance studies but on outdated and inaccurate models, etc. In short there is no real scientific evidence that these projects will reduce pollution or that "our" streams are actually a significant source of pollution today.
- The only effective way to partially restore these degraded urban watersheds is to first control the amount of stormwater runoff that flows into these stream channels. This is also a more effective way to reduce pollutants that will harm the Chesapeake Bay. The fact that these green alternatives may cost more than stream restoration is irrelevant if, as we have demonstrated, stream restoration is both destructive and ineffective. The real environmental cost of stream restoration has been completely ignored.
- The VA DEQ Stormwater Local Assistance Fund (SLAF) should stop funding these projects in urban watersheds areas. They are not helping to reduce pollution in the Chesapeake Bay or restoring (improving the ecology of

streams, protecting riparian forests) in these watersheds, and they are a misuse of tax dollars.

## Selected References

[As Maryland pours millions of dollars into ailing streams, research shows some projects don't help clean the bay](#)  
[BAY SCIENTISTS SAY STREAM RESTORATION NOT DELIVERING AS MUCH AS HOPED](#)

[ECA Five Things You Need to Know About the Taylor Run Stream Restoration Project](#)

[ECA Taylor Run Questions and Answers](#)

[Simmons, Rod., Review of Taylor Run NCD](#)

[John Field Final Report on Taylor Run \(2021\)](#)

[Field, John. \*\*Rebuttal to City Comments on Proposed Taylor Run Stream Restoration Project\*\*](#)

[The River Doctor \(Dave Rosgen profile\)](#)

[Booth and Bledsoe, Streams and Urbanization](#)

[Hawley et al., Detention Basin Retrofit to Reduce Erosive Flows](#)

[Lammers et. al, Integrating Stormwater Management and Stream Restoration Strategies for Greater Water Quality Benefits](#)

[American Society of Agronomy, Managing stormwater and stream restoration projects together](#)

[STORMWATER AND STREAM RESTORATION AGENCIES ACHIEVE MORE](#)

BY WORKING TOGETHER, STUDY FINDS

Booth, Jackson, The Urbanization of Aquatic Systems

***Concerns for the potential costs and damage from stream “restoration” in Arlington***

Letter Re: ***Taylor Run Stream Restoration project – Community questions and concerns***

Oliveira et al. Over forty years of lowland stream restoration: Lessons learned?

City of Alexandria Storm Sewer Capacity Analysis  
<https://www.alexandriava.gov/tes/stormwater/info/default.aspx?id=117415>

**Select comments regarding misapplied natural channel design stream “restoration” projects for small order, interior forested, upper headwater streams**

Andrew Macdonald/ECA/5/2021